UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/851,478	05/08/2001	Timo Hotti	017341-00050	3767

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EXAMINER
BLACK, LINH

ART UNIT	PAPER NUMBER
2167	

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/851,478	HOTTI ET AL.
	Examiner	Art Unit
	LINH BLACK	2167

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 July 2004*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date _____ ..

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 1-04)   **Office Action Summary**   Part of Paper No./Mail Date 20041019

DETAILED ACTION

1. This communication is in response to the second supplemental amendment dated

July 12 2004. Upon consulting to Primaries: Alford Kindred and Wassum Luke, the

claim language of limitations in claims are broad, a new non-final office action is

necessary.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. **Claims 1-7, 11-20, and 22-34 are rejected under 35 U.S.C. 103(a) as being**

unpatentable over Sheth et al., "Federated Database Systems for Managing

Distributed, Heterogeneous, and Autonomous Databases", 1990, pp. 183-236,

and further in view of Shih et al. (USP 6615223).

2. As per claims 1, 14-15, and 29, Sheth et al. teach "managing database schemas

and/or application configuration data in at least one database system" – pages 198-

202; figs. 9-12 wherein the Federated Database System is defined on page 183.

Sheth et al. teach at least one of the databases comprises a schema of the data

stored in the database – figs. 10-11; page 198, Local schema section.   Sheth et al.

teach "at least one schema and/or application configuration is managed externally of

said at least one application master database or at least one application replica

database" – figs. 16-22; page 200, second column, External schema section to page

201, first column, line 4.   However, Sheth et al. also teach "create backup and

recovery facilities in the file system if the federation users will perform updates to

data in the file system" – page 215, first column.

In the Summary of the Invention Section, Applicants teach "The

schema/application configuration management node may also be a server, a client

terminal or other node mentioned above, with a wireless or wireline connection to the

other servers and terminals, which include parts of the distributed database".   Sheth et

al. teach a configuration management node – fig. 1: FDBMS; page 191, 2nd column, first

paragraph; page 207, 2nd column; fig. 15. However, Sheth et al. do not explicitly

suggest "application replica database".

In the specification, page 2, applicants state: "Master database" is a

database catalogue, which in a database synchronization system that contains the

official version of synchronized/distributed data. A master database can have multiple

replica databases." An on page 3, first paragraph, applicants state: "This application

master database includes a schema master of the data stored in the database." No

further definition of "application master database" was found in the specification.

Examiner interprets "application master database" in the claims is basically "master

database".

Shih et al. teach "the replication of data in database system." – col. 1, lines 7-8;

fig. 1, elements 4 and 54; col. 4, line 44 to col. 5, line 25.   Thus, it would have been

obvious to one of ordinary skill in the art at the time of the invention to at least have a

replica database for each master database to better the performance of the database

system because when data replication is employed, multiple access locations exist for

the access and modification of the replicated data.   "In addition, data replication

provides greater fault tolerance in the event of a server failure, since the multiple copies

of the data object effectively become online backup copies if a failure occurs." – col. 1,

lines 10-22 of Shih et al.   Also, when a change request is either received at the master

or replica site, the change instruction is schema-specific.   And in a heterogeneous

environment, it cannot simply be sent to all remote replication sites to replicate the data

change.   Thus, external schemas are needed so that a change request can be

recognized across all replication sites.

3.   As per claims 2, 16, and 33, Sheth et al. teach at least one configuration

       management master is provided in at least one configuration management node,

       which is separate from each of said database nodes, at least one replica of at least

       parts of said configuration management master is stored to at least one database

       server comprising at least one application database, and the schema of each

       application database is created and/or updated on the basis of scripts of said

configuration management replica database – the tightly coupled federation: p. 191,
col. 1; p. 200, col. 1 which maintains the integrated schema in the federated system,
it makes the limitation "at least one replica of at least parts of said configuration
management master is stored to at least one database server comprising at least
one application database" inherent.

4. As per claims 3, 28, and 34, Sheth et al. teach the configuration of at least some
databases of said database system are managed by said configuration management
node – figs. 1 and 3; page 190, col. 1, last paragraph to col. 2; fig. 12; col. 205, 3rd
paragraph: A tightly coupled FDBS.

5. As per claim 4, Sheth et al. teach the application configuration of at least some
applications of said database system are managed by said configuration
management node – p. 197, 2nd col., 1st paragraph; p. 200, 1st col., last paragraph;
2nd col., the "External Schema" section; p. 216, section 3.1.2.

In the Summary of the Invention, Applicant states that "The "application configuration
management" means here that <u>application software</u> and/or its <u>configuration parameters
and other data needed to run the application</u>, are amended, added or deleted." In the
7th paragraph of the Detailed Description, Applicant teaches "application configuration
data such as software binaries and installation programs of the application master to the
database server".

6. As per claims 5, 6, 18, and 31, Sheth et al. do not explicitly suggest "at least parts of

   the application master database and said parts of said configuration management

   replica are synchronized." Shih et al. teach "the replication of data in database

   system." – fig. 1, elements 4 and 54; col. 4, line 44 to col. 5, line 45. Thus, after the

   same change is replicated to between one of the databases, at least parts of the

   master and the replica databases are synchronized. Thus, it would have been

   obvious to one of ordinary skill in the art at the time of the invention to combine the

   teaching of Shih et al. "the replication of data in database system" with the teaching

   of Sheth et al. to better the performance of database system because when data

   replication is employed, multiple access locations exist for the access and

   modification of the replicated data. "In addition, data replication provides greater

   fault tolerance in the event of a server failure, since the multiple copies of the data

   object effectively become online backup copies if a failure occurs." – col. 1, lines 10-

   22 of Shih et al.

7. As per claim 7, Sheth et al. teach the data of configuration management master is

   maintained by a configuration management application of said configuration

   management node – page 196, col. 1 and col. 2, 1st paragraph; p. 223, col. 2, 2nd

   paragraph. In fact that FDBS maintains the integrated schema, it makes the

   configuration management application inherent.

8. As per claim 19, Sheth et al. teach means for synchronizing/replicate data – page 195, section 1.2.3; page 205, col. 1, 2nd last paragraph; page 206, 2nd col., the "No constructing processor" section; p. 224, section 5.1, page 226, 1st col., 3rd paragraph. However, Shih et al. further teach "the replication of data in database system." – fig. 1, elements 4 and 54; col. 4, line 44 to col. 5, line 45. Thus, after the same change is replicated to between one of the databases, at least parts of the master and the replica databases are synchronized. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teaching of Shih et al. "the replication of data in database system" with the teaching of Sheth et al. to better the performance of database system because when data replication is employed, multiple access locations exist for the access and modification of the replicated data.

9. As per claims 22-23, Sheth et al. do not explicitly suggest the application replica database is provided in a terminal, which is a combination of a mobile station and a computer, and the terminal has at least one operating system. The Microsoft Computer Dictionary Fourth Edition teaches, "mobile computing is the process of using a computer while traveling. Mobile computing usually requires a portable computer that is battery powered, rather than a desktop system". However, Shih et al. teach "the replication of data in database system." – fig. 1, elements 4 and 54; col. 4, line 44 to col. 5, line 45. Shih et al. also teach replica on portable laptop computers – col. 23, lines 5-59. Thus, it would have been obvious to one of ordinary

skill in the art at the time of the invention to combine the teaching of Shih et al. "the

replication of data in database system" with the teaching of Sheth et al. to better the

performance of database system because when data replication is employed,

multiple access locations exist for the access and modification of the replicated data.

Also, a terminal can be portable in order to allow the usage of Sheth and Shih et al.'s

teachings more efficiently. In addition, a laptop computer with all the functionalities

as described in the columns and lines specified above would inherently contain an

operating system.

10. As per claims 12, 26, and 33, characterized in that schemas and/or application

configuration of at least two database systems are managed by a common

configuration management node, wherein a configuration management node of an

individual database system is a replica of said common configuration management

node – fig. 1; page 185, the "Characteristics of Database Systems" section; fig. 3;

page. 191, col. 1, 1st and 2nd columns; the tightly coupled federation: p. 191, col. 1;

p. 200, col. 1 which maintains the integrated schema in the federated system.

11. As per claims 13 and 27, a hierarchy of the application master databases and the

application replica databases is the same as a hierarchy of the configuration

management node, wherein the configuration management node is included as part

of the database system – figs. 1, 3; p. 191, col. 1; p. 200, col. 1.

12. As per claims 17 and 30, Sheth et al. teach some or all database servers of the
database system comprise a replica of said configuration management master – p.
205, 1st col., 2nd paragraph; p. 224, 1st col., section "5.1 Query Formulation".

13. As per claim 20, characterized in that the configuration management node
comprises a configuration management application for creating and/or updating the
configuration management master - page 196, col. 1 and col. 2, 1st paragraph; p.
223, col. 2, 2nd paragraph. In fact that FDBS maintains the integrated schema, it
makes the configuration management application inherent.

14. As per claim 24, Sheth et al. teach the application master database server and/or
the configuration management node has at least one operating system – page 186,
fig. 2, col. 1; page 188, 2nd col., 2nd paragraph.

15. As per claims 11 and 25, Sheth et al. and Shih et al. do not fairly suggest, "the
database is a database node residing in a database server." Applicants' prior art,
fig. 1, teach: "the database is a database node residing in a database server."
However, it would have been obvious to one of ordinary skill in the art at the time of
the invention to have the database residing in a database server in order to
efficiently control the accessing and modifying of the data in the database.

16. As per claim 30, Sheth et al. teach said configuration management master and/or configuration management replica comprises scripts for creating and/or updating the schema of each database and/or configuration of application accessing the database – page. 191, col. 1, 1st paragraph; col. 203, 2nd col. 3rd paragraph; page 205, 2nd col. 2nd paragraph; page 215, 1st col., last paragraph and 2nd col., 2nd paragraph; p. 216, 1st col., 1st paragraph.

17. Claims 8-10, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sheth et al., "Federated Database Systems for Managing Distributed, Heterogeneous, and Autonomous Databases", 1990, pp. 183-236, and further in view of Shih et al. (USP 6615223) and Dugan et al. (USP 6363411).

18. As per claims 8 and 21, Sheth et al. and Shih et al. do not fairly suggest "the method is compliant with at least one of the following communication specifications: TCP/IP..." Dungan et al. teach "Intelligent Network" – the title. Dungan et al. teach an intelligent distributed network architecture – col. 31, lines 18-20. Dungan et al. teach a data management ("DM") function enabling the run-time storage, replication, synchronization, and availability of data used by the service objects in the IDNA service nodes." – col. 13, lines 15-18. Dungan et al. teach the use of communication protocol: TCP/IP in a distributed environment – col. 18, lines 2-5. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Sheth et al. and Shih et al. with the usage of

TCP/IP, a known protocol that is globally recognized as standard that is reliable for

data communication on the network in order to take advantage of the good standard

protocol.

19. As per claim 9, Sheth et al. and Shih et al. do not fairly suggest "at least one of the

following operating systems is used in at least one terminal including an application

replica database of the database system: Unix, MS-Windows, NT, and Linux."

Dungan et al. teach an intelligent distributed network architecture – col. 31, lines 18-

20. Dungan et al. teach a data management ("DM") function enabling the run-time

storage, replication, synchronization, and availability of data used by the service

objects in the IDNA service nodes." – col. 13, lines 15-18. Dungan et al. teach "The

Service Control functions are embodied by Service Control Servers 405 which may

be a general purpose computer, such as an IBM RS6000, DEC Alpha Server,

Pentium based Personal Computer, or the like, and running any standard operating

system that is compatible with the computer on which it is running may be used; for

example, Microsoft Windows NT, UNIX, Sun, Solaris, or VMS." – col. 60, lines 38-

45. Thus, it would have been obvious to one of ordinary skill in the art at the time of

the invention to combine the teachings of Sheth et al. and Shih et al. with the usage

of standard operating systems, for example, UNIX or NT, in order to take

advantages of these good computers' operating systems.

20. As per claim 10, Sheth et al. and Shih et al. do not fairly suggest "at least one of

the following operating systems is used in at least one server including an

application master database of the database system: Unix, MS-Windows, NT, and

Linux." Dungan et al. teach an intelligent distributed network architecture – col. 31,

lines 18-20. Dungan et al. teach a data management ("DM") function enabling the

run-time storage, replication, synchronization, and availability of data used by the

service objects in the IDNA service nodes." – col. 13, lines 15-18.   Dungan et al.

teach "The Service Control functions are embodied by Service Control Servers 405

which may be a general purpose computer, such as an IBM RS6000, DEC Alpha

Server, Pentium based Personal Computer, or the like, and running any standard

operating system that is compatible with the computer on which it is running may be

used; for example, Microsoft Windows NT, UNIX, Sun, Solaris, or VMS." – col. 60,

lines 38-45. Thus, it would have been obvious to one of ordinary skill in the art at

the time of the invention to combine the teachings of Sheth et al. and Shih et al. with

the usage of standard operating systems, for example, UNIX or NT, in order to take

advantages of these good computers' operating systems.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LINH BLACK whose telephone number is 571-272-4106. The examiner can normally be reached on 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN BREENE can be reached on 571-272-4107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LINH BLACK
Examiner
Art Unit 2167

October 20, 2004